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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,840	10/26/2000	Shinsuke Henmi	Q61431	3264

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Sughrue Mion Zinn Macpeak & Seas  
2100 Pennsylvania Avenue NW  
Washington, DC 20037

EXAMINER

MULLINS, BURTON S

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/695,840

Applicant(s)

HENMI ET AL.

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 December 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Appeal***

1. The appeal is withdrawn and prosecution is reopened. The finality of the previous action is withdrawn.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 30 July 2003 has been considered by the examiner.

### ***Drawings***

3. Figures 12A-12B, 13 & 14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The disclosure is objected to because of the following informalities: Various non-idiomatic expressions appear in the specification. On p.8, line 10, "within the width 6b of the

Art Unit: 2834

brush” is not idiomatic. On p.8, lines 18-19, “introducing the pigtail 6a from the brush 6 in a direction toward a motor shaft” is not idiomatic. The term “introducing portion” used throughout the specification will be taken to mean the connection between the pigtail and the brush. Appropriate correction is required.

### *Claim Objections*

5. Claims 1-4 are objected to because of the following informalities: In claim 1, the phrase “a pigtail extends from an introducing portion in the brush” is not idiomatic. Presumably the term “introducing portion” refers to the point of connection between the pigtail and the brush. However, it could conceivably also refer to a particular part of the brush, e.g. an end of the brush.

6. In claim 2, the phrase “within the width of the brush” is not clear. Presumably this refers to the terminal/pigtail connection lying more or less radially of the brush, per Fig.3. However, it could conceivably also refer to a position located axially from the brush.

7. Regarding claims 3-4, the phrase “the pigtail is introduced from the brush in a direction toward a motor shaft” is not idiomatic. Presumably this means the pigtail connects to the brush along a radial direction, per Fig.3.

8. Regarding claims 8-11, the phrase “the pigtail is introduced from a backside of the brush” is not idiomatic. Presumably this means the pigtail connects to the brush on the brush’s “backside”, i.e. outer radial side, per Fig.11. However, it could also conceivably mean the pigtail connects to the brush along the radial direction, i.e. from the direction of the backside of

Art Unit: 2834

the brush. Further, “backside” could refer to any part at the end of the brush since “front” and “back” have not been defined.

Appropriate correction and/or explanation is required.

***Claim Rejections - 35 USC § 112***

9. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, the phrase “a terminal plate and the pigtail...connected in an area within 90° from the introducing portion toward the radial direction of the brush holder” is vague and indefinite because the “introducing portion”, i.e. the point where the pigtail connects to the brush (from the claim language “a pigtail extends from an introducing portion in the brush”) moves radially as the brush is worn down during operation of the motor. Thus, it is not clear what region is included in the “area within 90° from the introducing portion toward the radial direction of the brush holder”. When the brush is new and long, the area covered by the claim language is different from the area covered by the same language when the brush is worn and short.

***Claim Rejections - 35 USC § 103***

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi (US 5,810,111) and Hockaday (US 6,246,144). Takeuchi generally teaches a dynamo-electric

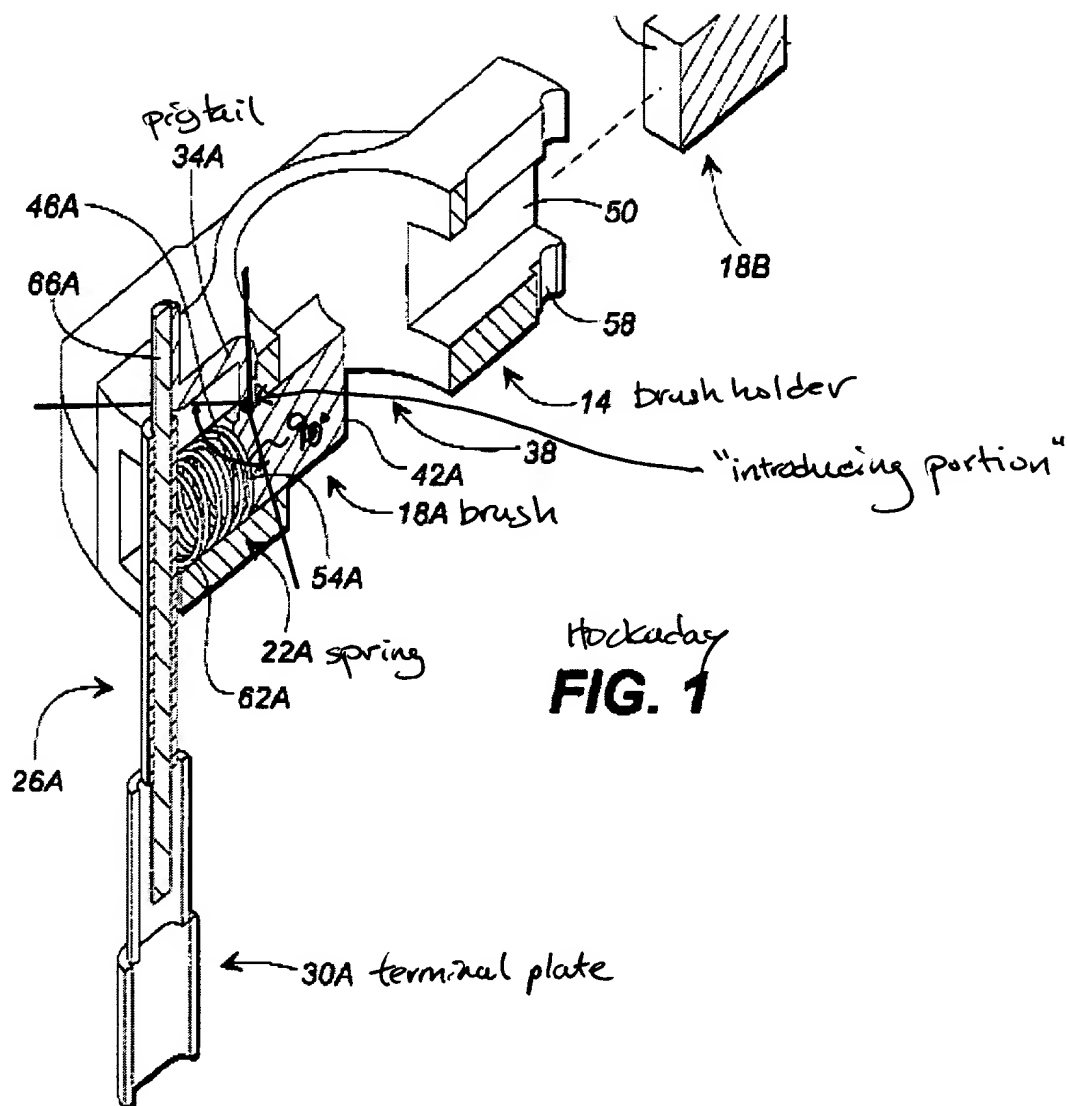
Art Unit: 2834

machine comprising a motor 5 for an electric power steering apparatus, the dynamo-electric machine rotatable in both directions (inherent, since steering is performed in both directions and the motor assists the torque according to the direction, c.7, lines 11-13). Takeuchi further teaches a brush holder 23 wherein a spring 46 and a brush 22 are set in a brush holder base (i.e., brush holder) 23 (Figs.2, 9 & 11), a pigtail 44 extends from an “introducing portion” [sic] in the brush 22 (Figs.8&9 show pigtail 44 connecting brush 22 at an “introducing portion”).

Takeuchi differs in that the pigtail 44 does not extend from the introducing portion in the brush 22 “in a radial direction of the brush holder” and further does not teach “a terminal plate and the pigtail...connected in an area within 90° from the introducing portion toward the radial direction of the brush holder”.

Hockaday teaches a brush holder and lead arrangement for a dynamo-electric machine comprising a brush holder (holder/card) 14 including a spring 22A and a brush 18A set in a brush holder base (slot) 50 (Fig.1). A pigtail 34A extends from an introducing portion in the brush 18A (i.e., pigtail 34A connects with brush 18A at a connection point, not numbered; Fig.1) in a radial direction of the brush holder (i.e., the pigtail 34A extends radially relative to the machine axis, as does the brush holder 14; Fig.1), and a terminal plate 30A and the pigtail 34A are connected in an area within 90 degrees from an introducing portion toward the radial direction of the brush holder (at portion 66A; see marked Fig.1 below).

Art Unit: 2834



Hockaday's brush holder and lead arrangement serves to carry electricity to and from the brushes and to compress the spring used to bias the brush toward the commutator (c.1, lines 5-11).

It would have been obvious to modify Takeuchi and provide a pigtail extending from the introducing portion in the brush in a radial direction of the brush holder, the terminal plate and the pigtail connected in an area within 90° from the introducing portion toward the radial

Art Unit: 2834

direction of the brush holder per Hockaday to carry electricity to and from the brushes and to utilize the lead to compress and spring, thus biasing the brush toward the commutator.

Regarding claim 2, in Hockaday the terminal 30A and the pigtail 34A are connected in an area around a sliding axis of the brush “within the width of the brush” [sic] since the terminal/pigtail connection at portion 66A lies more or less radially of the brush 18A (Fig.1).

Regarding claims 3-4, in Hockaday, the pigtail is “introduced from the brush” [sic] in a direction toward a motor shaft (not shown, inherent) since the pigtail 34A is routed to the brush 18A along a generally radial path (Fig.1).

Regarding claims 5-7, in Hockaday a column comprising portion 66A extends from the terminal plate 30A to connect with the pigtail 34A (Fig.1).

Regarding claims 8-11, in Hockaday, the pigtail is “introduced from a backside of the brush” [sic] in the sense that the pigtail 34A is routed to the brush 18A along a generally radial path, from the direction of the backside of the brush, or that the pigtail connects to the brush at one end of the brush, i.e. a radial “backside” of the brush (Fig.1).

12. Claims 1-4 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi (US 5,810,111) and Ozaki et al. (US 4,311,936). As described above, Takeuchi generally discloses applicant’s invention but differs in that the pigtail 44 does not extend from the introducing portion in the brush 22 “in a radial direction of the brush holder” and further does not teach “a terminal plate and the pigtail...connected in an area within 90° from the introducing portion toward the radial direction of the brush holder”.

Ozaki teaches a brush holding device 16 including a guide cylinder 18, a brush 19 and coil spring 21 fit into the cylinder, and a brush terminal 27 positioned to abut against the outer



Art Unit: 2834

end of the guide cylinder and electrically connected with the brush 19 through a pigtail 22 (Figs.1-4). As seen in Figs.3&4, the pigtail 22 extends from the introducing portion in the brush 19 in a radial direction of the brush holder 16, and the terminal plate 27 and the pigtail 22 are connected in an area within 90° from the introducing portion toward the radial direction of the brush holder 16. Ozaki's arrangement allows for easy brush replacement (c.1, lines 55-58).

It would have been obvious to modify Takeuchi and provide a pigtail extending from the introducing portion in the brush in a radial direction of the brush holder, the terminal plate and the pigtail connected in an area within 90° from the introducing portion toward the radial direction of the brush holder per Ozaki since this would have allowed for easy brush replacement.

Regarding claim 2, in Ozaki the terminal 27 and the pigtail 22 are connected in an area around a sliding axis of the brush "within the width of the brush" [sic] since the terminal/pigtail connection lies more or less radially of the brush 19 (Fig.3).

Regarding claims 3-4, in Ozaki the pigtail is "introduced from the brush" [sic] in a direction toward a motor shaft 13 since the pigtail 22 is routed to the brush 19 along a generally radial path (Fig.3).

Regarding claims 8-11, in Ozaki the pigtail is "introduced from a backside of the brush" [sic] in that the pigtail 22 connects to the radially outer side of the brush 19 (Fig.3).

13. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi (US 5,810,111) and Southall (US 5,159,222). As described above, Takeuchi generally discloses applicant's invention but differs in that the pigtail 44 does not extend from the introducing portion in the brush 22 "in a radial direction of the brush holder" and further does not teach "a

Art Unit: 2834

terminal plate and the pigtail...connected in an area within 90° from the introducing portion toward the radial direction of the brush holder”.

Southall teaches a brush holder plate 11 including brush cartridge 15, a brush 26 and coil spring 27S fit into the cartridge (Fig.3), and a brush terminal (spade connector) 23 electrically connected with a pigtail 25 at upper channel portion 24 (c.5, line 56-c.6, line 8). As seen in Fig.3, the pigtail 25 extends from the introducing portion in the brush 26 in a radial direction of the brush holder 11, and the terminal plate 23 and the pigtail 25 are connected in an area within 90° from the introducing portion toward the radial direction of the brush holder 11 (Figs.1&3). Southall's brush holder facilitates removal and replacement of worn commutator brushes (c.3, lines 22-34).

It would have been obvious to modify Takeuchi and provide a brush holder per Southall having a pigtail extending from the introducing portion in the brush in a radial direction of the brush holder, the terminal plate and the pigtail connected in an area within 90° from the introducing portion toward the radial direction of the brush holder since this would have facilitated removal and replacement of worn commutator brushes.

Regarding claim 2, in Southall the terminal 23 and the pigtail 25 are connected in an area around a sliding axis of the brush “within the width of the brush” [sic] since the terminal/pigtail connection lies more or less radially of the brush 26 (Figs.1&3).

Regarding claims 3-4, in Southall the pigtail is “introduced from the brush” [sic] in a direction toward a motor shaft (shown in Fig.7) since the pigtail 25 is routed to the brush 26 along a generally radial path (Fig.3).

Art Unit: 2834

Regarding claims 5-7, in Southall a column comprising upper channel portion 24 extends from the terminal plate 23 to connect with the pigtail 25 (c.5, lines 63-68; Fig.3).

Regarding claims 8-11, in Southall the pigtail is "introduced from a backside of the brush" [sic] in that the pigtail 25 connects to the radially outer side of the brush 26 (Fig.3).

### *Conclusion*

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
06 December 2006

